

FASTSET™ DOT Mix AND FASTSET™ DOT Mix - EXTENDED

PRODUCT No. 1244-56, 1244-81

DIVISION 3 & 3

Maintenance of Concrete
03 01 00
Rigid Pavement Repair
32 01 29

PRODUCT DESCRIPTION

FastSet™ DOT Mix and FastSet™ DOT Mix – Extended are a fiber reinforced, rapid setting repair materials specifically designed to meet ASTM C928 Category R3 specifications for a high-performance repair materials.



PRODUCT USE

QUIKRETE FastSet DOT Mix meets DOT Region 3 requirements as a patching material for commercial applications at a thickness of 1/2" - 2" (12.7 - 51 mm). This product may also be extended with up to 25 lb (11.3 kg) of gravel per 55 lb (25 kg) bag for repairs to roads and bridges at a minimum thickness of 2" (51 mm). FastSet™ DOT Mix Extended is identical to FastSet™ DOT Mix except that it already contains the recommended amount of coarse aggregate. QUIKRETE FastSet™ DOT Mix is available with an integral corrosion inhibitor in cases where maximum corrosion protection is desired. The addition of corrosion inhibitor has no adverse effect on the other physical properties of the product.

LIMITATIONS

- During extremely hot or dry conditions, cold water should be used to maintain mix at a moderate placement temperature
- Mix no more than can be used in 20 minutes

SIZES

- FastSet DOT Mix - 55 lb (25 kg) bags
- FastSet DOT Mix Extended - 80 lb (36.3 kg) bags

YIELD

- A 55 lb (25 kg) bag of FastSet DOT Mix will yield 0.44 cu ft (12.5 L) at a mortar consistency
- An 80 lb (36.3 kg) bag of FastSet DOT Mix Extended (1244-81) or a 55 lb (25 kg) bag of FastSet DOT Mix (1244-56) extended with 25 lb (11.3 kg) of high-quality ASTM C33 size number 8 aggregate (100% - 1/2" (12.7 mm)) will yield approximately 0.57 cu ft (16.1 L)

TECHNICAL DATA

APPLICABLE STANDARDS

ASTM International

- ASTM C33 Standard Specification for Concrete Aggregates
- ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
- ASTM C157/C157M Standard Test Method for Length Change of Hardened Hydraulic-Cement, Mortar, and Concrete
- ASTM C191 Standard Test Method for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
- ASTM C672 Standard Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals
- ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs
- ASTM C1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout

Department of Transportation (DOT) Region III Test Method IV

PHYSICAL/CHEMICAL PROPERTIES

QUIKRETE FastSet DOT Mix is a blend of rapid hardening cement, sand and special additives. Typical results obtained on FastSet DOT Mix, when tested in accordance with the applicable ASTM test methods, are shown in Table 1.

Similar results are obtained with FastSet DOT Mix Extended (1244-81) or with the addition of up to 25 lb (11.3 kg) of high quality ASTM C33 size number 8 aggregate (100% -1/2" (12.7 mm)) to a bag of FastSet DOT Mix (1244-56).

TABLE 1 TYPICAL PHYSICAL PROPERTIES

Compressive strength, ASTM C109 Modified

Age	ASTM C928 Specification	Typical Values
1.5 hours	-	3000 psi (20.7 MPa)
3 hours	3000 (20.7 MPa)	4500 psi (31.0 MPa)
24 hours	5000 (34.5 MPa)	6500 psi (44.8 MPa)
7 days	5000 (34.5 MPa)	8000 psi (55.1 MPa)
28 days	-	10,000 psi (68.9 MPa)

Setting time, ASTM C191

Initial	10 - 20 minutes
Final	20 - 45 minutes

Length change, ASTM C157

Condition	ASTM C928 Specification	Typical Values
28 days, air	> -0.15%	-0.052%
56 days, air	-	-0.057%
84 days, air	-	-0.062%
28 days, water	< +0.15%	+0.020%
56 days, water	-	+0.024%
84 days, water	-	+0.027%

Cylindrical height change, ASTM C1090

24 hours	+0.02%
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Slant shear bond strength

Age	ASTM C928 Specification	Typical Values
24 hours	1000 psi (6.9 MPa)	1200 psi (8.3 MPa)
7 days	1500 psi (10.3 MPa)	1620 psi (11.2 MPa)

Scaling resistance testing

Test method	Specification	Typical Values
ASTM C666	> 60% modulus	78%
ASTM C672	(Visual)	< 2.5
ASTM C672	1 lb/ft ² (5 kg/m ²)	0
(Mass Loss)		
Region 3 TM4 @ 25 cycles	< 8.0% loss	-0.28%
Region 3 TM4 @ 50 cycles	< 8.0% loss	+0.38%

INSTALLATION

SURFACE PREPARATION

All surfaces should be clean and free of foreign substances that would cause bond failure. Remove all spalled areas and areas of unsound concrete. The hole should have a vertical edge of 1/2" (12.7 mm) or more, formed by use of a pneumatic jackhammer or by sawing. In some cases, it may be necessary to roughen smooth surfaces or etch old ones with acid. After the chipping process is

completed, the repair area must be cleaned via water blasting or another suitable method. Dampen holes with clean water before patching. No puddles of water should be left in the hole.

MIXING

Mechanically mix FastSet DOT Mix or FastSet DOT Mix Extended for a minimum of 3 minutes using a standard concrete or mortar mixer. Use approximately 1 gal (3.8 L) of clean potable water per 55 lb (25 kg) bag of FastSet DOT Mix or 80 lb (36.3 kg) bag of FastSet DOT Mix Extended. Adjust water as needed to achieve a placeable consistency. The recommended slump is 3" - 7" (75 - 175 mm). Do not exceed recommended slump range.

APPLICATION

Place the repair material quickly and continuously, using light rodding to eliminate bubbles. Mechanical vibration should be avoided in areas that will be exposed to de-icing salts. After DOT Mix has been compacted and spread to completely fill the forms without air pockets, strike off and float immediately. To strike off, use a straight board (screed), moving the edge back and forth with a sawlike motion to smooth the surface. Use a darby or bull float to float the surface; this levels any ridges and fills voids left by the straight edge. Cut the DOT Mix away from the forms by running an edging tool or trowel along the forms to compact the slab edges.

Note - For best results, do not overwork the material.

CURING

Proper curing increases the strength and durability of concrete repair materials. QUIKRETE Concrete Sealer (No. 8800) provides the easiest and most convenient method of curing. Apply by spray, brush or roller, when the surface is hard, following the final finishing operation. The surface may be damp, but not wet, when applying the curing compound.

AVAILABILITY

FastSet™ DOT Mix and FastSet™ DOT Mix – Extended are available at leading concrete construction supply houses and distributors. Contact QUIKRETE Construction Products for the name of the nearest dealer.

WARRANTY

The QUIKRETE® Companies warrant this product to be of merchantable quality when used or applied in accordance with the instructions herein. The product is not warranted as suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of its product (as purchased) found to be defective, or at the shipping companies' option, to refund the purchase price. In the event of a claim under this warranty, notice must be given to The QUIKRETE® Companies in writing. This limited warranty is issued and accepted in lieu of all other express warranties and expressly excludes liability for consequential damages.

MAINTENANCE

None required.

TECHNICAL SERVICES

The QUIKRETE® Companies maintain technical field representatives throughout the country.

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** Refer to www.quikrete.com for the
most current technical data, MSDS,
and guide specifications*

